

CLAIMS

5 1. A network relay apparatus comprising:
 a routing information gathering unit for
 determining the maximum transmission unit of a
transmission path along a route over which packets are to
be transmitted; and
 a combining unit for assembling a combined
packet by combining packets up to a length that does not
exceed the maximum transmission unit of said transmission
path.

10 2. An apparatus according to claim 1, wherein said
combined packet carries as a destination address the
address of an endpoint of the route over which said
packets are transmitted in combined form, said apparatus
further comprising:
 a disassembling unit for disassembling a
received combined packet into individual packets if the
destination address of said received combined packet
matches the address of said apparatus.

15 20 3. An apparatus according to claim 1, further
comprising a routing processing unit for selecting a path
having the largest maximum transmission unit as a path
for said combined packet from among a plurality of
transmission paths to the same destination.

25 30 4. An apparatus according to claim 3, wherein said
routing processing unit selects a path having the largest
maximum transmission unit as a path for said combined
packet from among a plurality of transmission paths to
the same destination by excluding the path along the
shortest route.

35 35 5. An apparatus according to claim 1, further
comprising a combine allow/disallow determining unit for
determining, based on a packet attribute, whether or not
said combining unit should be made to combine packets.

6. An apparatus according to claim 1, further
comprising a reassembling unit for disassembling a
received combined packet into individual packets and

reassembling the same into a combined packet of a length not exceeding the maximum transmission unit of the currently selected path if the length of said received combined packet exceeds said maximum transmission unit.

5 7. A method of combining packets, comprising the steps of:

determining the maximum transmission unit of a transmission path along a route over which packets are to be transmitted; and

10 assembling a combined packet by combining packets up to a length that does not exceed the maximum transmission unit of said transmission path.

8. A method according to claim 7, wherein said combined packet carries as a destination address the address of an endpoint of the route over which said packets are transmitted in combined form, said method further comprising the step of:

disassembling a received combined packet into individual packets if the destination address of said received combined packet matches the address of an apparatus that received said combined packet.

9. A method according to claim 7, further comprising the step of selecting a path having the largest maximum transmission unit as a path for said combined packet from among a plurality of transmission paths to the same destination.

10. A method according to claim 9, wherein in said selecting step, a path having the largest maximum transmission unit is selected as a path for said combined packet from among a plurality of transmission paths to the same destination by excluding the path along the shortest route.

11. A method according to claim 7, further comprising the step of determining, based on a packet attribute, whether to combine or not combine packets.

12. A method according to claim 7, further comprising the step of disassembling a received combined

packet into individual packets and reassembling the same
into a combined packet of a length not exceeding the
maximum transmission unit of the currently selected path
if the length of said received combined packet exceeds
said maximum transmission unit.

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